

10G Single-Mode Optical Module SC



AI Overview

A 10G single-mode optical module is an SFP+ transceiver that delivers 10 Gigabit Ethernet over single-mode fiber up to 10 km using a 1310 nm wavelength and LC duplex connectors.

Overview A 10G single-mode optical module (SFP+) is a compact, hot-pluggable transceiver designed to convert electrical signals from switches or routers into optical signals suitable for single-mode fiber (SMF) transmission. These modules are widely used in data centers, enterprise networks, and telecom environments to provide reliable long-distance links with minimal signal loss and low latency.

Key Specifications

- Data Rate:** 10 Gigabit per second (10G) for high-speed network connectivity.
- Wavelength:** 1310 nm, optimized for long-distance single-mode fiber transmission.
- Maximum Distance:** Up to 10 kilometers over single-mode fiber.
- Connector Type:** LC duplex, compatible with standard single-mode patch cords.
- Standards Compliance:** Conforms to 10GBASE-LR (Long Reach) under IEEE 802.3ae, ensuring interoperability across vendors.
- Form Factor:** SFP+ small form-factor, allowing high port density and hot-pluggable operation.
- Optional Features:** Digital Optical Monitoring (DOM/DDM) for real-time measurement of optical power, temperature, and voltage.

Advantages

- Long-Distance Connectivity:** Supports up to 10 km, ideal for connecting switches across buildings or campus networks.
- Low Latency and High Stability:** Efficient signal processing ensures minimal delay and reliable connections for high-performance applications like cloud computing, video streaming, and real-time data processing.
- Energy Efficient:** Designed for low power consumption while maintaining high-speed performance.
- Interoperability:** Multi-source agreement (MSA) compliance allows use with a wide range of switches, routers, and network interface cards.

Deployment Considerations

- Ensure the fiber type is single-mode (SMF) with a core diameter of approximately 9 μm to minimize modal dispersion.
- Verify optical budget and link loss to maintain signal integrity over the intended distance.

Article Content

Cisco 10GBASE SFP+ Modules Data Sheet

The Cisco SFP-10G-LR10-I supports a link length of 10 kilometers on standard Single-Mode Fiber (SMF, G.652). The SFP-10G-LR10-I is for industrial operating temperature range.

10G Single-Mode Optical Module

SFP+ transceiver that supports 10G connections up to 10 km using single-mode fiber with a duplex LC UPC connector.

Cisco 40GBASE QSFP Modules Data Sheet

This module can be used for native 40G optical links over 12-fiber ribbon cables with MPO/MTP connectors or in 4x10G mode with parallel-to-duplex fiber breakout cables for connectivity

SFP Module Buying Guide: How to Choose the Right

SFP modules (Small Form-factor Pluggable) are the standard interface for connecting fiber optic or copper cables to network switches, routers,

10G SFP+ XSGPON OLT, Tx1577/Rx1270nm, 20km,

This product allows the distribution of multipoint connections from a 10G XGPON port on the OLT side, thus facilitating service to end users through an optimized

HTF DWDM equipment,OTN Solution,QSFP28 OSFP

HTFuture offers industry-leading fiber optic products and WDM system solutions with global recognition for excellence and innovation.

10G SFP+ Optical Transceivers | Transceiver Module

FS 10GbE SFP+ module solutions provide a wide variety of 10 Gigabit Ethernet connectivity options for data centers, enterprise wiring closets, Internet Service

SFP Optical Transceiver Modules for Long Distance: A Complete

Discover everything you need to know about SFP optical transceiver modules for long-distance fiber transmission. Compare LX, EX, ZX models and choose the right module for your

10G X2 ZR Module Guide: Specs, Compatibility & Sourcing

The phrase "10G X2 ZR" refers to a specialized 10 Gigabit Ethernet optical transceiver module designed for ultra-long-haul connectivity, reaching up to 80 km over single-mode fiber Fibermall Exaoptics.

Wholesale Optical Transceivers Module | 100G

Unitekfiber, a global optical transceiver wholesaler, provides a comprehensive portfolio of MSA-compliant transceivers—including 10G SFP+, 40G QSFP+,

SFP Optical Transceiver | SFP Optical Module | Perle

For example, by simply replacing the pluggable optical transceiver, a media converter that was originally used in a multimode network can be re-configured

The Key Differences Between 1-core, 2-core, Single

Understanding 1-core, 2-core, Single Mode, and Multi-mode optical modules helps you design efficient networks. Whether you're working on long

The Ultimate Guide to SFP Modules (2026): Types,

Confused by SFP vs SFP+? Read the definitive 2026 guide on SFP modules. We explain Single Mode vs Multimode, DDM diagnostics, and how to choose the

Shengwei lc-sc fiber optic patch cord | single-mode dual-core 2.5g/10g ...

This time, i bit the bullet and bought the shengwei fsc-108 lc-sc single-mode dual-fiber patch cable (3m, light yellow). not to show off, but to personally reclaim the 2.5gbps bandwidth that

How to distinguish whether an optical fiber module is single-mode or ...

Correctly distinguishing single-mode and multi-mode optical modules is critical for matching fiber patch cords,ensuring transmission stability,and avoiding network failures.

Small Form-factor Pluggable

Small Form-factor Pluggable connected to a pair of fiber-optic cables Small Form-factor Pluggable (SFP) is a compact, hot-pluggable network interface module

Single Mode Optical Transceiver Market: Growth & Key Drivers

The Single Mode Optical Transceiver market, projected at \$14 billion with a 10.87% CAGR, is driven by soaring data demand and 5G deployment. Access market dynamics.

XG-SFP-LR-SM1310 10GBASE-LR SFP+ 1310-nm 10-km DOM

The XG-SFP-LR-SM1310 is aligned to IEEE 10GBASE-LR optical specifications and supports a link length of up to 10 kilometers over a single-mode fiber (SMF) with an LC connector.

Comprehensive Guide to FS 10G BiDi SFP Modules

10G BiDi SFP+ modules utilize a unique optical mechanism that enables full-duplex data transmission over a single strand of single-mode fiber (SMF). This is achieved using two different

10G Bidirectional Single-Mode Optical Module

SFP+ transceiver that supports 10G connections up to 10 km using single-mode fiber with a simplex LC UPC connector.

1.6T OSFP 2xDR4/DR8, 1310nm, 500m, DDM, CDR,

The MJ-OSFP1.6TB-DR8 is a cost-effective, high-performance OSFP module tailored for AI datacenter applications, delivering an aggregate throughput of 1.6

Ubiquiti 10G CWDM Single-Mode Optical Module • SFP+ • 10/1GbE •

Product information "Ubiquiti 10G CWDM Single-Mode Optical Module • SFP+ • 10/1GbE • 1270nm • Single Pack • UACC-OM-SFP10-1270" SFP+-Transceiver für CWDM, der 10G-Verbindungen bis zu

Cisco 10GBASE SFP+ Modules Data Sheet

The Cisco® 10GBASE SFP+ modules (Figure 1) give you a wide variety of 10 Gigabit Ethernet connectivity options for data center, enterprise

10GE SFP+ Optical Modules

Fan Modules Installing a Power Surge Protector Pluggable Modules for Ports
Understanding Optical Modules Understanding Copper Modules Understanding Hybrid
Modules Guide to Using Pluggable

SFP+ Optical Transceiver Modules (10G-SR/LR)

Amphenol SFP Optical Modules • SFP+ Optical Modules from Cables on Demand are
Now Available in both Short Range (SR) Multimode and Long Range (LR)

Contact Us

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